phenomena, are now at last being taken under the wing of science after long ridicule and contempt. The phenomenon of crime, the scientific meaning and justification of altruism, and other matters relating to life and conduct, are beginning, or perhaps are barely yet beginning, to show a vulnerable front over which the forces of science may pour.

Facts so strange that they have been called miraculous are now no longer regarded as entirely incredible. All occurrences seem reasonable when contemplated from the right point of view, and some are believed in which in their essence are still quite marvellous. Apply warmth for a given period to a sparrow's egg, and what result could be more incredible or magical if now discovered for the first time. The possibilities of the universe are as infinite as is its physical extent. Why should we grope with our eyes always downward, and deny the possibility of everything out of our accustomed beat.

If there is a puzzle about free-will, let it be attacked; puzzles mean a state of half-knowledge; by the time we can grasp something more approximating to the totality of things the paradoxity of paradoxes drops away and becomes unrecognizable. I seem to myself to catch glimpses of clues to many of these old questions, and I urge that we should trust consciousness, which has led us thus far; should shrink from no problem when the time seems ripe for an attack upon it, and should not hesitate to press investigation, and ascertain the laws of even the most recondite problems of life and mind.

What we know is as nothing to that which remains to be known. This is sometimes said as a truism; sometimes it is half doubted. To me it seems the most literal truth, and that if we narrow our view to already half-conquered territory only, we shall be false to the men who won our freedom, and treasonable to the highest claims of science.

I must now return to the work of this Section, from which I have apparently wandered rather far afield, further than is customary—perhaps further than is desirable. But I hold that occasionally a wide outlook is wholesome, and that without such occasional survey, the rigid attention to detail and minute scrutiny of every little fact, which are so entirely admirable and are so rightly here fostered, are apt to become unhealthily dull and monotonous. Our life-work is concerned with the rigid framework of facts, the skeleton or outline map of the universe: and, though it is well for us occasionally to remember that the texture and colour and beauty which we habitually ignore are not therefore in the slightest degree non-existent, yet it is safest speedily to return to our base and continue the slow and laborious march with which we are familiar and which experience has justified. It is because I imagine that such systematic advance is now beginning to be possible in a fresh and unexpected direction that I have attempted to direct your attention to a subject which, if my prognostications are correct, may turn out to be one of special and peculiar interest to humanity.

THE LATE PROF. MARTIN DUNCAN, F.R.S.

We have already announced the death of this well-known geologist; and now give a brief account of his services to science.

As a Fellow of the Royal, Linnean, Geological, and Microscopical Societies, and for some time President of the two last-named of these, it goes without saying that his attainments were of no mean order. Educated for the medical profession at King's College, London, he matriculated at the London University in 1841, taking honours in anatomy and physiology in 1844, and the degree of Bachelor of Medicine in 1846, in which year also he qualified as a Member of the Royal College of Surgeons. His early life was passed at Rochester with Dr. Martin, and at Colchester, where he was in practice for some years, and where he so won the esteem of all who knew him that he was elected Mayor of that city. Fascinated with the study of geology, and impressed with the idea that to make any mark in the scientific world a man should take up some *spécialité*, he not only obtained a broad grasp of his favourite subject, but devoted himself especially to a study of fossil corals and echinoderms, on which subjects at intervals he published numerous valuable memoirs. Indeed, for many years, and up to within a comparatively short period of his death, he continued to work at his special subject, and contributed many important papers to the *Annals and Magazine of Natural History*, the Journal of the Geological Society, the *Geological Magazine*, *Quarterly Journal of Microscopical Science*, the Philosophical Transactions and Proceedings of the Royal Society, the Proceedings and Transactions of the Zoological Society, and the Journal of the Linnean Society.

He soon found that residence out of London, away from scientific societies and important works of reference, was a great obstacle to work, and that if he was to make any real progress with his special studies it was absolutely necessary for him to seek some appointment in the metropolis. Fortunately for him, as it happened, the Chair of Geology at King's College became vacant, and he was appointed to fill it. This at once gave him the opportunity he had so long hoped for, and the preparation of his lectures proceeded side by side with much useful work, which, by degrees, he found time to publish. Such, for example, was his account of the Madreporaria collected during the expedition of H.M.S. *Porcupine*, which appeared in the Transactions of the Zoological Society (Part 1, vol. viii. p. 303, &c., and Part 2, vol. x. p. 235, &c.); his description of deep-sea and litoral corals from the Atlantic and Indian Oceans (Proc. Zool. Soc., 1876, p. 428, &c.); and his important revision of the Echinoidea, printed in the Journal of the Linnean Society, of which it occupied four numbers.

This was all strictly scientific work, but by no means represented all that he accomplished. As a popular exponent of the teaching of geology and zoology, especially in regard to the lower forms of life, he published many excellent articles which were designed to awaken an interest in subjects little investigated, though well worthy of attention.

Lucidly written and full of facts, these articles were at once instructive and suggestive, and from a teachers' point of view did more to educate youthful naturalists and encourage research than any of his more scientific papers, which, being of a more technical character, were less acceptable to the majority of readers because less intelligible to them.

Of this class were his articles on "Corals and their Polypes" (*Intellectual Observer*, 1869, pp. 81-91, 241-50, with two coloured plates); "Studies amongst Amœbæ" (*Popular Science Review*, 1877, with two plates), and "Notes on the Ophiurans, or the Sand and Brittle Stars" (*Popular Science Review*, 1878, with a plate).

His attention, however, was not confined to invertebrate zoology or geology. In 1878 he commenced the publication, in six volumes quarto, of a popular "Natural History," which had the merit of being written by a number of able specialists upon a comprehensive plan under his direction, and, while taking upon himself the laborious duties of editor-in-chief, he contributed many of the sections himself. Thus, while securing the co-operation of such well-known zoologists as the late Prof. W. K. Parker, the late Mr. Dallas, Prof. Seeley, Prof. Boyd Dawkins, Dr. H. Woodward, Dr. Murie, Mr. H. W. Bates, and Mr. R. B. Sharpe, he himself undertook the preparation of the articles on Apes and Monkeys, Lemurs (part), Edentata, Marsupialia, Reptilia, and Amphibia. He also wrote the introduction to the Invertebrata, and the articles Vermes, Zoophytes, and Infusoria which appeared in the last volume, published in 1883.

For an excellent summary of marine zoology, in which the appearance, structure, and habits of such animals and plants as may be found upon our coasts are well described, the reader may be referred to a little volume by Dr. Duncan, entitled "The Sea-shore." It forms one of a series of "Natural History Rambles," issued a few years since by the Society for Promoting Christian Knowledge, and, for the amount of information which it

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contains, as well as for its lucid expression, deserves to be better known.

Dr. Martin Duncan was undoubtedly one of the working bees in the great hive of science; and in his own quiet, unostentatious way has stored up a considerable amount of material the value of which will be more and more appreciated as those for whose benefit it was accumulated come to examine and understand it.

In his ardent devotion to science, and patient industry in spite of trials and troubles which would have deterred many less earnest workers, he set a bright example, which those of a younger generation of naturalists would do well to follow.

NOTES.

IT seems that those members of the Government, whichever they may be, who are responsible for buildings for science and art, have determined to erect new galleries for the Art Museum at South Kensington; practically to cover all the ground which is supposed to be applicable for art purposes there. These buildings are to cost some £400,000, and, when this money is spent, we suppose the South Kensington Art Museum will be finished. We suppose, also, that the building of a Science Museum will, by this action, be delayed for another twenty years. This will be a great victory for art, and will afford another interesting example of the results of the way in which matters scientific are managed in this country.

MR. EDGAR THURSTON, Curator of the Government Museum at Madras, has been appointed to officiate for two years for Dr. Watt, at Calcutta, in reporting on economic products and organizing collections of products and manufactures for the Calcutta and other Indian Museums; his duties at Madras being in the meantime discharged by Dr. Warth, of the Geological Department.

PROF. GOEBEL, of Marburg, has been appointed to the Chair of Botany at Munich in succession to the late Prof. Naegeli.

WE regret to announce the death of Dr. Weiss, the Professor of Botany and Director of the Plant-Physiological Institute of the University of Prague.

THE late Cardinal Haynald's important herbarium and botanical library has been placed in the National Museum at Budapest.

WE learn from Madras that the observations made under the direction of the late Mr. Pogson are in a forward state of reduction, and that the real activity of the Observatory is not to be measured by the fact that the last published volume of observations contains the record of those made in 1870. The funds at the disposal of the Madras Observatory have not permitted the regular and early publication of the masses of observations which the industry of Mr. Pogson and his assistants has accumulated, and the scheme which the Director proposed to himself did not permit him to give, from time to time, an abstract of his work through the ordinary and recognized channels open for the dissemination of astronomical results. Mr. Michie Smith writes that the "Variable Star Atlas" alone contains the observations of about 60,000 stars, made and reduced by Mr. Pogson. We may express an earnest wish that no long time may be suffered to elapse before astronomers have an opportunity of judging the value of this mass of material in an interesting branch of astronomical inquiry.

UNDER the McKinley *régime* it seems to be a very generous thing for an American *savant* to communicate a paper to a British society. One of them writes as follows to the *Nation*:—"A learned society of Scotland, in pursuance of its liberal policy, mailed to me fifty author's copies of a paper which had been honoured by admission to its Transactions. The bundle came to the local post-office this week opened, and accompanied by a slip giving the package a 'commercial value' of twelve dollars, and assessing a duty of 25 per cent. The local collector of customs thinks that I am resisting the just claims of a hard-working Government in delaying payment; but curiosity as to how they discover the commercial value of a paper whose real audience might, I think, be numbered on the fingers of the two hands, has led me to appeal the case."

Science states that the executors of the estate of the late William B. Ogden, the first Mayor of Chicago, have selected the University of Chicago as one of the beneficiaries, giving it a scientific school. The gift, which will amount to from three hundred thousand to half a million dollars, will endow a separate department of the University, to be called the Ogden Scientific School, its purpose being to furnish graduate students with the best facilities possible for scientific investigation by courses of lectures and laboratory practice. The income of the money appropriated is to be devoted to and used for the payment of salaries and fellowships, and the maintenance of laboratories in physics, chemistry, biology, geology, and astronomy, with the subdivisions of these departments. A large share of the time of the professors in the school is to be given to original investigation, and encouragement of various kinds is to be furnished them to publish the results of their investigations, a portion of the funds being set apart for the purpose of such publication.

IT seems as if in time the publishers of sea-side guides may realize that some people who require a holiday are intelligent, possess eyes, and perchance even some acquaintance with natural history. We have just received a copy of Johnson's illustrated "Visitors' Companion" to Eastbourne and its vicinity, which contains, besides the matter usually supplied, an account of the flora, consisting of 291 varieties of wild flowers, 9 orchids, 18 ferns, 12 mosses and their allies, 34 varieties of sea-weeds (with directions for collecting and preserving them); particulars are also given of 56 varieties of butterflies (with time of appearance), 45 varieties of moths (with time of appearance, and how to catch them by the electric light), 29 varieties of wild bees, pebbles, fossils, land and freshwater mollusca, a brief geological survey of the district, and an extensive list of wild birds which frequent the neighbourhood, together with a guide to fresh and salt water fishing. Have we to thank Prof. Huxley's local influence for this?

AN exhibition of the successes in acclimatization achieved in Russia will be opened at Moscow, in connection with the International Congresses of Zoology and Prehistoric Archæology and Anthropology which will be held in the Russian capital in August 1892. The results of the numerous experiments in acclimatization of a great variety of plants which have been made during the last twenty-five years, especially in the Asiatic dominions of the Empire, will be exhibited.

IN a Vice-Presidential Report to the U.S. National Geographic Society, on the "Geography of the Air," Lieut. A. W. Greely reviews the progress of meteorological science during the past year, chiefly with reference to the work of American meteorologists. Referring to the recent controversy on the causes of cyclones and anticyclones, he says:—"The status of the meteorological discussion which has been going on for some time seems to be this. A number of men, applying themselves to investigation in separate branches or stages of the same science, are attempting to reconcile their views, which, based as they are upon entirely different processes of investigation, are not entirely accordant. Some at least of these writers are still apparently groping in the preliminary, the 'natural history' stage of the science of meteorology, while one alone stands as the exponent of the 'natural philosophy' of meteorology." This view seems somewhat inappreciative, and the account given of Dr.

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